Best Available CODY UNITED STATE EPARTMENT OF COMMERCE Patent and Transmark Office Address: COMMISSIONER OF PATENTS AND TRADEMARKS Washington, D.C. 20231

•		
	APPLICATION NUMBER FILING DATE FIRST NAMED APPLICANT.	ATTY, DOCKET NO.
	08/951,991 10/16/97 GREENLEAF	_
		EXAMINER : 90248
	BARRY E SAMMONS	ART UNIT: PAPER NUMBER
	QUARLES BRADY	WORSKI, F
	MILWAUKEE WI 53202-4497	(
	A position that the contract is a potent nation — DATE	737 MAILED:
	(b) the invention well privated or described in a printed publication in this or a loreign on on talk in this country, more than one year prior to the date of application for general in the	actry or an public 21.498
	This is a communication from the examiner in charge of your application.	
	COMMISSIONER OF PATENTS AND TRADEMARKS patent granted on an application for putent ov another	r file d in the United
	States before the investigation thereof by the applicant for paters, or on an international appli- ture fieldled the requirements of porfice ACTION SUMMARY 71(e) of this title	equon by another who
	Corpol by the applicant for prient.	COLUMN YOU GENERALIST
/	Responsive to communication(s) filed on 6-5-98 The following is a quotation of 3-3-3-0 103(a) which forms die basis	
ı	This action is FINAL.	10: an our ousness
ı	rejections set forth in this Office action: Since this application is in condition for allowance except for formal matters; prosecution as to the	merits is closed in
	accordance with the practice under Ex parte Quayle, 1935 D.C. 11; 453 O.G. 213. (a) A patent may not be obtained though the invention is not identically disclosed or detail.	ibed as not forth in
sh	ortened statutory period for response to this action is set to expire subject management to be parmont	h(s), or thirty days
3 f	thever is longer, from the mailing date of this communication. Failure to respond within the period for application to become abandoned. (35'U:SIC. § 133). Extensions of time may be obtained under the	response will cause
13	6(a). agamer in which the inventors was made.	provisions or on order
87	position of Claims	
/	/	
	Claim(s) 1.77 is/a	re pending in the application.
	Of the above, claim(s) Section 9 and responses community to 17.5.C. Tu2(0.0) as the research of the above, claim(s)	ithdrawn from consideration.
	Claim(s)	is/are allowed.
		ts/are rejected.
ı	Claim(s)	is/are objected to
	Claim(s) ket et as is directed to a beam producer said to be "socar ultranshipled to rest	is/are objected to.
	Claim(s) ker et al is directed to a beam arphoteer said to be "sonar ultrans subject to rest	iction of election requirement.
p	Claim(s) ker et also diseated to a beam arphiter said to be "sopar ultrare subject to resti lication Rapers source with subsequent Doppler sint analysis (Col. 7 lines 9-14 and 2)	iction of election requirement.
P	Claim(s) ker et al is directed to a beam arphiter said to be "sonar ultrare subject to restillection Repersource with subsequent Doppler sint analysis (Col. 7 lines 9-14 and 2). See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948. (Approximately)	1-38) by the use of
)P	Claim(s) Let at it, directed to a beam anodater said to be "sooar ultrare subject to rest lication Repers source with subsequent Doppler sint analysis (Col. 7 lines 9-14 and 2). See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948. Approval The drawing(s) filed on generator 100 which has adjustable frequency and sumaish	1-38) by the use of
P P	Claim(s) Let et al is directed to a beam arpditier said to be "sonar ultrare subject to restilication Repers source with subsequent Doppler sink analysis (Col. 7 lines 9-14 and 2). See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948. The drawing(s) filed on generator 100 which has adjustable injuries objected to by the Extent Drawing of the drawing correction, filed on is Tale.	1-38) by the use of
P	Claim(s) Let at it, directed to a beam argument said to be "sonar ultrare subject to restification Repersource with subsequent Doppler sold analysis (Col. 7 lines 9-14 and 20 See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948. (Approximation in the description of the Examiner III) which has adjustable trading to the Examiner III) which has adjustable trading to the Examiner III at the proposed drawing correction, filed on	1-38) by the use of times of disapproved.
P	Claim(s) Lot et al is directed to a beam arpditier said to be "sonar ultrare subject to restilication Repersion to with subsequent Doppler said analysis (Col. 7 lines 9-14 and 2). See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948. The drawing(s) filled on generator 100 which has adjustable induction by the Examiner. The specification is objected to by the Examiner. The cath or declaration is objected to by the Examiner. Claim 7 is rejected under 35 U.S.C. 103(s) as heing unpatentable over 19 and	1-38) by the use of times of disapproved.
IOI	Claim(s) Let et al is directed to a beam arpdicer said to be "sonar ultrare subject to restilication Papers source with subsequent Doppler sont analysis (Col. 7 lines 9-14 and 20 See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948. The drawing(s) filed on generator 100 which has adjustable induction generator 100 which has adjustable induction by the Examiner. The specification is objected to by the Examiner. Claim 7 is rejected under 35 U.S.C. 103(a) as heing unpatentable over 10 trity under 35 U.S.C. § 119	1-38) by the use of and (Cel 8 lines iminer. arker et at as
P	Claim(s) Let et al is directed to a beam arpdicer said to be "sonar ultrare subject to restilication Papers source with subsequent Doppler sont analysis (Col. 7 lines 9-14 and 20 See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948. The drawing(s) filed on generator 100 which has adjustable induction generator 100 which has adjustable induction by the Examiner. The specification is objected to by the Examiner. Claim 7 is rejected under 35 U.S.C. 103(a) as heing unpatentable over 10 trity under 35 U.S.C. § 119	1-38) by the use of and (Col. 8 lines iminer. arker et at as
P	Claim(s) Let et al is directed to a beam arpdicer said to be "sonar ultrare subject to restilication Papers source with subsequent Doppler sont analysis (Col. 7 lines 9-14 and 20 See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948. The drawing(s) filed on generator 100 which has adjustable frequency for the proposed drawing correction, filed on is adjustable frequency for the Examiner. The specification is objected to by the Examiner. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over the triangle of a claim for foreign priority under 35 U.S.C. \$ 119(a)-(d).	1-38) by the use of and (Col. 8 lines iminer. arker et at as
IOI	Claim(s) Let et al is directed to a beam arpdicer said to be "sonar ultrare subject to restilication Papers source with subsequent Doppler sont analysis (Col. 7 lines 9-14 and 20 See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948. The drawing(s) filed on generator 100 which has adjustable induction generator 100 which has adjustable induction by the Examiner. The specification is objected to by the Examiner. Claim 7 is rejected under 35 U.S.C. 103(a) as heing unpatentable over 10 trity under 35 U.S.C. § 119	1-38) by the use of and (Col. 8 lines iminer. arker et at as
IOI	Claim(s) Let et al is directed to a beam arpditiver said to be "sonar ultrare subject to restilication Papers source with subsequent Doppler sont analysis (Col. 7 lines 9-14 and 20 See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948. The drawing(s) filled on generator 100 which has adjustable inductive and proposed drawing correction, filled on is adjustable in some objected to by the Examiner. The specification is objected to by the Examiner. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over the specification of the Central of the Central of the priority under 35 U.S.C. \$ 119(a)-(d). Unless the Central of the Central of the Central of the Central of the Priority documents have been received.	iction of election requirement. 1-38) by the use of and (Col. 8 lines iminer. pproved disapproved. Parker et al. 48
P	Claim(s) Let et al is directed to a beam arpdisser said to be "sonar ultrare subject to restilication Papers source with subsequent Doppler sont analysis (Col. 7 lines 9-14 and 20 See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948. The drawing(s) filed on generator 100 which has adjustable traditional solution generator 100 which has adjustable traditional solution generator 100 which has adjustable traditional solution is a lateral traditional solution is objected to by the Examiner. The specification is objected to by the Examiner. Claim 7 is rejected under 35 T. S. C. 103(a) as being unpatentable over the specification is made of a claim for foreign priority under 35 U.S.C. \$ 119(a)-(d). Unless the control of the CERTIFIED copies of the priority documents have been received. received. received in Application No. (Series Code/Serial Number)	iction of election requirement. 1-38) by the use of ang (Col. 8 lines improved. I disapproved. Parker et at as
P	Claim(s) Let et al is directed to a beam arpditiver said to be "sonar ultrare subject to restilication Papers source with subsequent Doppler sont analysis (Col. 7 lines 9-14 and 20 See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948. The drawing(s) filled on generator 100 which has adjustable inductive and proposed drawing correction, filled on is adjustable in some objected to by the Examiner. The specification is objected to by the Examiner. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over the specification of the Central of the Central of the priority under 35 U.S.C. \$ 119(a)-(d). Unless the Central of the Central of the Central of the Central of the Priority documents have been received.	iction of election requirement. 1-38) by the use of ang (Col. 8 lines improved. I disapproved. Parker et at as
P)	Claim(s) Let et a is directed to a beam arodiner said to be "sonar ultrare subject to restilication Papers source with subsequent Doppler sont analysis (Col. 7 lines 9-14 and 20 See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948. Approved The drawing(s) filled on generator 100 which has adjustating Island a said person of the Examiner. The proposed drawing correction, filled on	iction of election requirement. 1-38) by the use of sines improved disapproved. Carker et at as 10-63 which
Pi Pi	Claim(s) Let et al is directed to a beam archiver said to be "sonar ultrare subject to restification Papers source with subsequent Doppler sont analysis (Col. 7 lines 9-14 and 20 See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948. The drawing(s) filed on generator 100 which has adjust able frequency and subjected to by the Examiner. The proposed drawing correction, filed on is a line specification is objected to by the Examiner. Claim 7 is rejected under 3.5 U.S.C. 103(a) as being unpatentable over the under 35 U.S.C. § 119 Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d): United States of the priority documents have been received. The received in Application No. (Series Code/Serial Number) Petriffed copies not received:	iction of election requirement. 1-38) by the use of the control o
Pi Pi	Claim(s) Let et a is directed to a beam arodiner said to be "sonar ultrare subject to restilication Papers source with subsequent Doppler sont analysis (Col. 7 lines 9-14 and 20 See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948. Approved The drawing(s) filled on generator 100 which has adjustating Island a said person of the Examiner. The proposed drawing correction, filled on	iction of election requirement. 1-38) by the use of the control o
	Claim(s) Let et al is directed to a beam archiver said to be "sonar ultrare subject to restification Papers source with subsequent Doppler sont analysis (Col. 7 lines 9-14 and 20 See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948. The drawing(s) filed on generator 100 which has adjust able frequency and subjected to by the Examiner. The proposed drawing correction, filed on is a line specification is objected to by the Examiner. Claim 7 is rejected under 3.5 U.S.C. 103(a) as being unpatentable over the under 35 U.S.C. § 119 Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d): United States of the priority documents have been received. The received in Application No. (Series Code/Serial Number) Petriffed copies not received:	iction of election requirement. 1-38) by the use of the same (Col. 8 lines proved disapproved. Cacker et at as 10-03 which
oi /	Claim(s) Let et al. is. directed to a beam archiver said to be seem ultrare subject to restilication Rapers source with subsequent Doppler soid analysis (Col. 7 lines 9-14 and 2). See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948. Approved The drawing(s) filed on generator 100 which has adjustable trequency and subjected to by the Examiner. The specification is objected to by the Examiner. The specification is objected to by the Examiner. Claim 7 is rejected under 35 U.S.C. \$ 103(a) as heing unpatentable over the string under 35 U.S.C. \$ 119 Acknowledgment is made of a claim for foreign priority under 35 U.S.C. \$ 119(a) (d). All Some* None of the CERTIFIED copies of the priority documents have been received. received in Application No. (Series Code/Serial Number) received in this national stage application from the International Bureau (PCT Rule 17.2(a)). Certified copies not received: Acknowledgment is made of a claim for domestic priority under 35 U.S.C. \$ 119(e).	iction of election requirement. 1-38) by the use of the control o
	Claim(s) Let et al is directed to a beam arpdineer said to be "sonar ultrare subject to restilication Rapers source with subject to restilication Rapers source with subject to restilication Representation of Draftsperson's Patent Drawing Review, PTO-948. See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948. The drawing(s) filed on generator 100 which has adjustable traditions of Subjected to by the Examiner. The proposed drawing correction, filed on is a first and subjected to by the Examiner. The proposed drawing correction, filed on is a first and a subjected to by the Examiner. Claim 7 is rejected under 35 U.S.C. \$ 119(a) as being unpatentable over the sunder 35 U.S.C. \$ 119(a). (d). Acknowledgment is made of a claim for foreign priority under 35 U.S.C. \$ 119(a). (d). Acknowledgment is made of a claim for foreign priority under 35 U.S.C. \$ 119(a). (d). Preceived in Application No. (Series Code/Serial Number) received in this national stage application from the International Bureau (PCT Rule 17.2(a)). Certified copies not received: Acknowledgment is made of a claim for domestic priority under 35 U.S.C. \$ 119(e).	iction of election requirement. 1-38) by the use of ane (Col. 8 lines proved disapproved. Carter et at as 10-63 which
	Claim(s) Let et al. is. directed to a beam archiver said to be seem ultrare subject to restilication Rapers source with subsequent Doppler soid analysis (Col. 7 lines 9-14 and 2). See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948. Approved The drawing(s) filed on generator 100 which has adjustable trequency and subjected to by the Examiner. The specification is objected to by the Examiner. The specification is objected to by the Examiner. Claim 7 is rejected under 35 U.S.C. \$ 103(a) as heing unpatentable over the string under 35 U.S.C. \$ 119 Acknowledgment is made of a claim for foreign priority under 35 U.S.C. \$ 119(a) (d). All Some* None of the CERTIFIED copies of the priority documents have been received. received in Application No. (Series Code/Serial Number) received in this national stage application from the International Bureau (PCT Rule 17.2(a)). Certified copies not received: Acknowledgment is made of a claim for domestic priority under 35 U.S.C. \$ 119(e).	iction of election requirement. 1-38) by the use of ane (Col. 8 lines proved disapproved. Carter et al. as 10-63 which
	Claim(s) Let et al is directed to a beam arpdineer said to be "sonar ultrare subject to restilication Rapers source with subject to restilication Rapers source with subject to restilication Representation of Draftsperson's Patent Drawing Review, PTO-948. See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948. The drawing(s) filed on generator 100 which has adjustable traditions of Subjected to by the Examiner. The proposed drawing correction, filed on is a first and subjected to by the Examiner. The proposed drawing correction, filed on is a first and a subjected to by the Examiner. Claim 7 is rejected under 35 U.S.C. \$ 119(a) as being unpatentable over the sunder 35 U.S.C. \$ 119(a). (d). Acknowledgment is made of a claim for foreign priority under 35 U.S.C. \$ 119(a). (d). Acknowledgment is made of a claim for foreign priority under 35 U.S.C. \$ 119(a). (d). Preceived in Application No. (Series Code/Serial Number) received in this national stage application from the International Bureau (PCT Rule 17.2(a)). Certified copies not received: Acknowledgment is made of a claim for domestic priority under 35 U.S.C. \$ 119(e).	iction of election requirement. 1-38) by the use of ane (Col. 8 lines proved disapproved. Carter et at as 10-63 which
	Claim(s) Let at its the directed to a beam underter said to be "soor ultrare subject to restrict and so the subject to by the Examiner. The proposed drawing correction, filed on	iction of election requirement. 1-38) by the use of ane (Col. 8 lines proved disapproved. Carter et at as 10-63 which
*C / A acc	Claim(s) Let at its directed to a beam producer said to be "sonar ultrare subject to restrict to Rapera source with sub-acquent Doppler sont analysis (Col. 7 lines 9-14 and 20 See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948. Approved The drawing's filled On	iction of election requirement. 1-38) by the use of ane (Col. 8 lines proved disapproved. Carter et al. as 10-63 which

· 🗷

Serial Number: 08/951,991

Art Unit: 3737

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the 1. basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
- (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.
- 2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
 - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- Claims 1, 3-6 and 8-9 are rejected under 35 U.S.C. 102(b,e) as being anticipated by Parker 3. et al.

Parker et al is directed to a beam producer said to be "sonar/ultrasound/swept frequency vibration or audio source with subsequent Doppler shift analysis (Col. 7 lines 9-14 and 24-38) by the use of a vibration function generator 100 which has adjustable frequency and signal shape (Col. 8 lines 6-17) and object vibration detection is by either Doppler or B-modes.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Parker et al as 4. applied to claim 1 above, and further in view of Sarvazyan ('565), Col. 1 lines 60-63 which

Serial Number: 08/951,991

Art Unit: 3737

teaches the equivalence of MRI to the ultrasound used in Parker et al in the imaging of tissue motion.

- Claims 1, 4-5 and 9 are rejected under 35 U.S.C. 102(b,e) as being anticipated by Bowen. 5. Bowen includes disclosure of use of pulse-modulated ultrasound to induce thermal stresses which in turn are ultrasonically imaged by a detector, Col. 3 line 62-Col. 4 line 39 for example. Since a pulse is inherently a form of amplitude modulation the base claim 1 is met. Since the thermal stress manifests as expansion the detection is effectively of a form of motion and therefore claim 5 is met.
- Claims 1, 4-5 and 9 are rejected under 35 U.S.C. 102(b,e) as being anticipated by 6. Shimura et al or Sato et al.
- Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimura et al or 7. Sato et al as applied to claim 1 above, and further in view of Sato et al (Acoustic Imaging V20 article pgs. 9-18, of record.)
- 8. The two patents which differ with respect to through transmission ('460) and reflective transmission ('255) are both directed to pulse amplitude (modulation) to provide a pump pulse e.g. Fig. 7(c) of the latter which pulse is directed at the patient, and a detector system (ultrasonic phase detection and/or display) which serves as a carrier for the object motion signal out of the body. With respect to claim 2, the Sato et al article establishes that an audio output would be the equivalent of a display or recording since the patents' technology is effectively a form of percussion which was heretofore audibly observed.

Serial Number: 08/951,991 Page 4

Art Unit: 3737

9. Claims 1, 3-9 are rejected under 35 U.S.C. 102(b,e) as being clearly anticipated by

Sarvazyan.

10. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sarvazyan as

applied to claim 1 above, and further in view of Sato et al (Acoustical Imaging Vol. 20 article).

Insofar as the latter establishes the equivalence of acoustic force provision to percussion wherein

audible output is a simple and effective output modality for a user.

Any inquiry concerning this communication should be directed to Examiner Francis J.

Jaworski at telephone number (703) 308-3061.

Francis J. Jaworski

Primary Examiner